

A REDESCRIPTION OF *ANTHOMASTUS AGILIS* TIXIER-DURIVAUT WITH A GENERIC PLACEMENT IN *SINULARIA* (COELENTERATA: OCTOCORALLIA), AND SOME REMARKS ON *SINULARIA RAMOSA* TIXIER-DURIVAUT.

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ABSTRACT

The holotype of *Anthomastus agilis* (family Alcyoniidae) does not have siphonozooids nor the characteristic spiculation of *Anthomastus*, as originally reported. The specimen is redescribed and transferred to the genus *Sinularia*. Some additional information and sclerite drawings are given for *Sinularia ramosa*.

KEYWORDS: Coelenterata, Anthozoa, Alcyonacea, Octocorallia, Alcyoniidae, *Anthomastus*, *Sinularia*, soft corals, new combination, taxonomy, New Caledonia.

INTRODUCTION

During the course of researching the identity of an unusual dimorphic soft coral from Darwin, northern Australia, I had cause to examine the holotype of *Anthomastus agilis* which had been described by Tixier-Durivault (1970a: 186-187). Apart from lacking the characteristically large autozooids of *Anthomastus*, it also became obvious that the spiculation was quite atypical of that genus. A far too cursory look at the proposed siphonozooids that were reported by Tixier-Durivault led to my erroneous "pers. comm." to Dr Gary Williams (1992:1, 23) that the material represented a new genus. A subsequent examination, regrettably too late to prevent publication, revealed that the siphonozooids recorded by Tixier-Durivault were actually inflated caecae of the subsurface canal system. Ironically, Tixier-Durivault (1951:11) had previously pointed out that other authors had made similar mistakes.

The holotype has the characteristic spiculation of a *Sinularia* and is herein transferred to that genus as an undescribed species. The somewhat unusual growth form is perhaps attributable to its apparent juvenility when preserved, and the inflated nature of the specimen, and

possibly also its most recent habitat, which was the Noumea Aquarium run by its founder M. René Catala.

It appears that Utinomi and Imahara (1976: 211) failed to take into account the difference in the respective sizes of the internal sclerites when they proposed that *A. agilis* was a probable synonym of *A. phalloides* Benham, 1928. The sclerites of *A. agilis* were described as up to 2.2 mm in length and those of *A. phalloides* only up to 0.25 mm. Williams (1992:19) recently transferred *A. phalloides* to the genus *Minabea*.



Fig. 1. *Sinularia agilis*, holotype. 1.5 times natural size.

Mme d'Hondt's 1992 paper (published in 1993) was only received subsequent to submitting the manuscript for this paper. Several electron micrographs of surface sclerites

of *Anthomastus agilis* are illustrated in Figure 1 of that publication and should be viewed in conjunction with the present description.

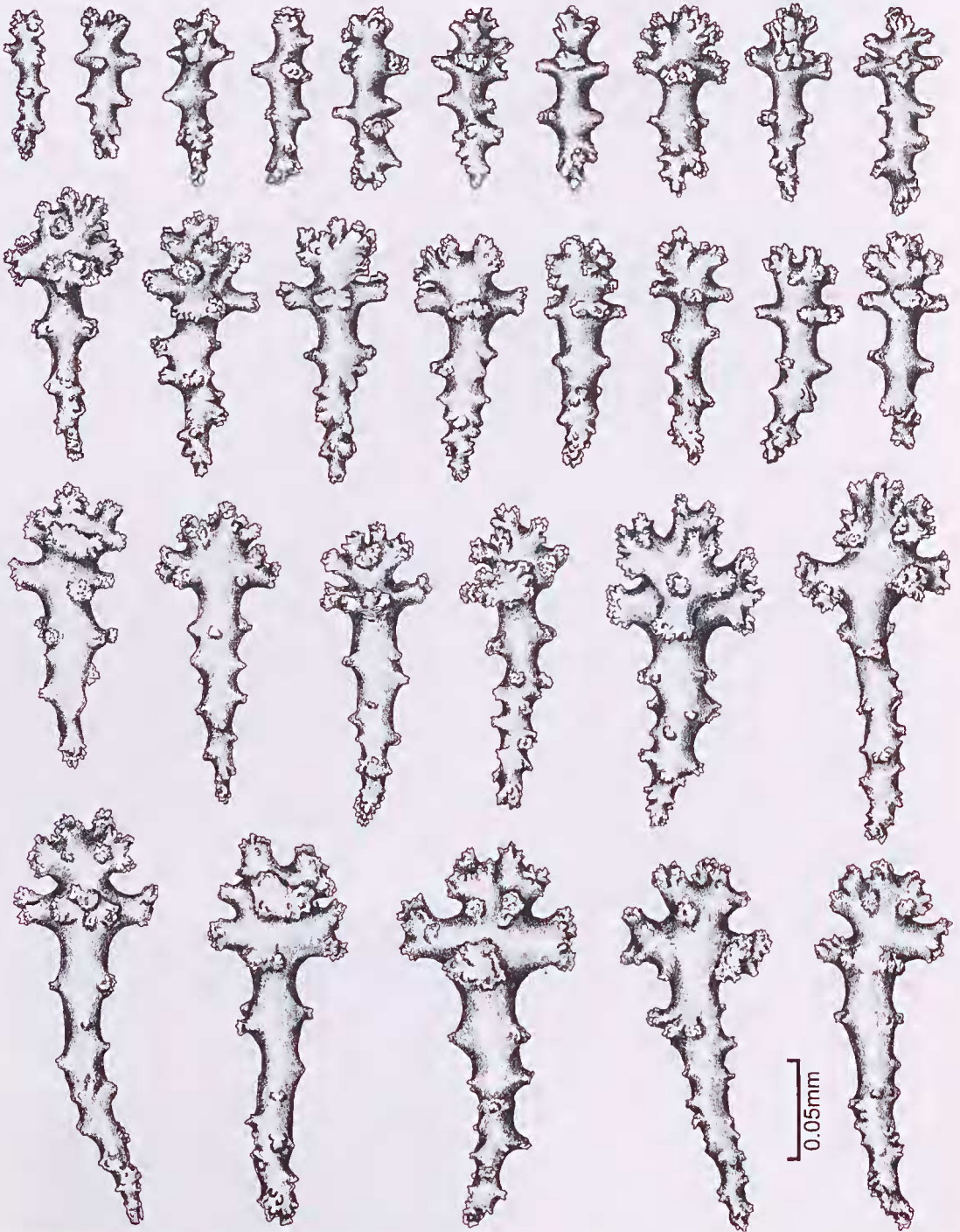


Fig. 2. *Sinularia agilis*, holotype, sclerites from the surface of the lobes.

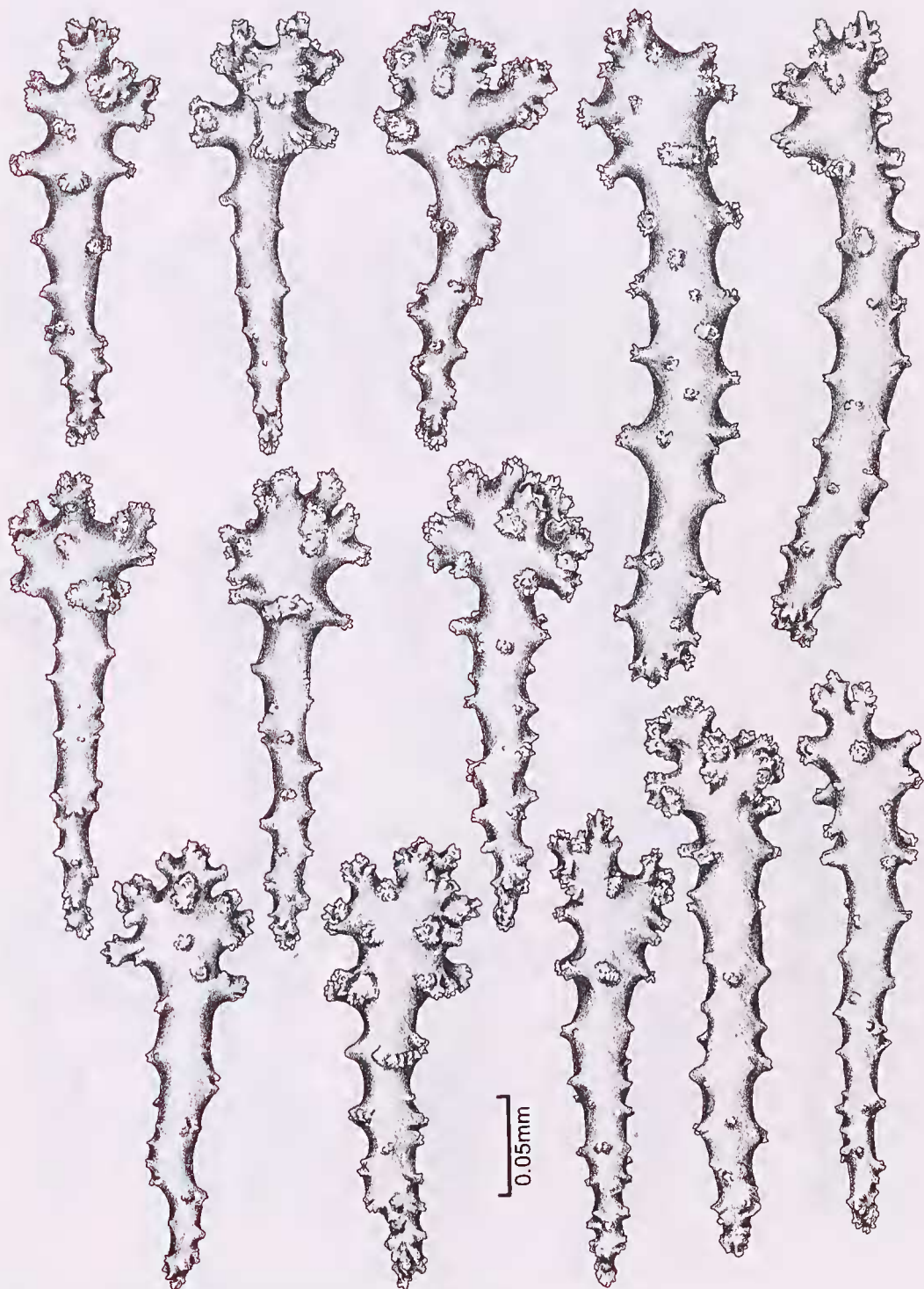


Fig. 3. *Sinularia agilis*, holotype, sclerites from the surface of the lobes.

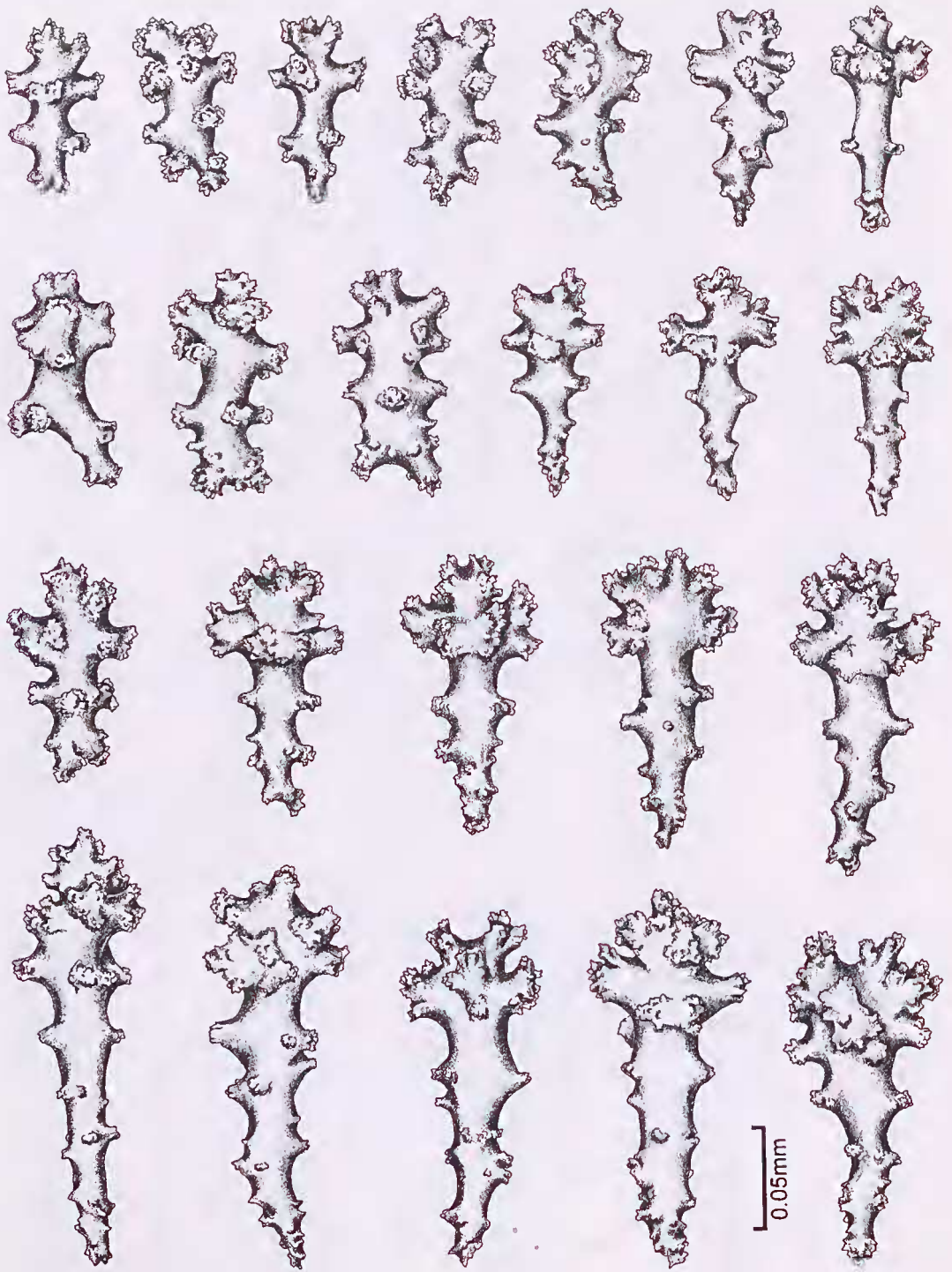


Fig. 4. *Sinularia agilis*, holotype, sclerites from the surface of the base.

SYSTEMATICS

Family Alcyoniidae Lamouroux Genus *Sinularia* May, 1898

Sinularia agilis (Tixier-Durivault, 1970a) new comb. (Figs 1-5)

Anthomastus agilis Tixier-Durivault, 1970a:186-187.

Type Material. HOLOTYPE - Noumea, R. Catala, 1966, Muséum National d'Histoire Naturelle, Paris.

Description. The holotype (Fig. 1) is a single lobe, about 40 mm in length and 11 mm at its greatest upper diameter, with a small flattened lobe, 15 x 6 mm, that protrudes from one side. The

colony seems to have been preserved in a relatively inflated state and is soft and compressible.

The polyp apertures are about 0.5 mm across and are present over both the large and small lobes down to within approximately 15 mm of the base of the specimen. While some of the polyps have their contracted, but unfolded, tentacles protruding, most are retracted until they are flush with the lobe surface. The inflated caecae of the subsurface canal system appear as clear patches between the white heads of the club-shaped surface sclerites, and are present right down to the base of the specimen. Tixier-Durivault's illustration (1970a: fig. 10E) is misleading in its uniform representation of the shape of the patches which actually vary from small and more-or-less circular, to larger irregular and often elongate structures. Microscopical examination of small tissue fragments in both

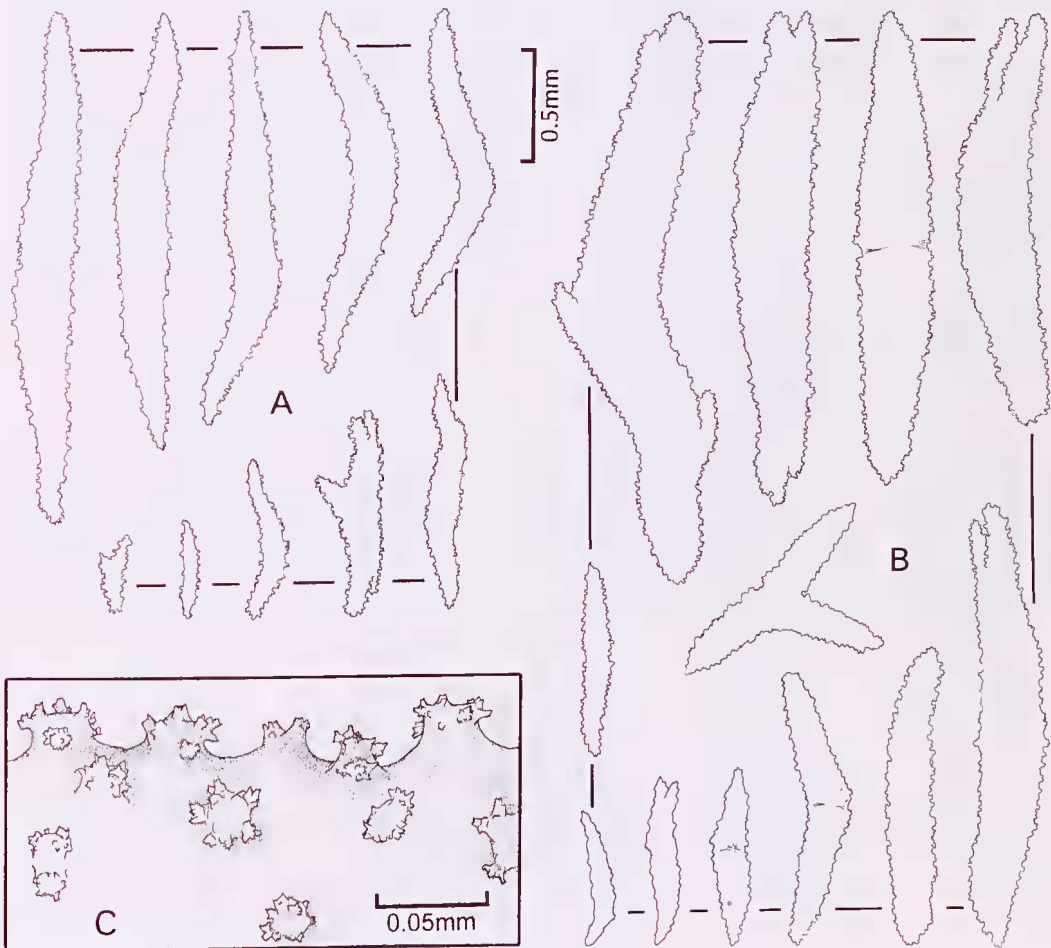


Fig. 5. *Sinularia agilis*, holotype: A, sclerites from the interior of the lobes; B, sclerites from the interior of the base; C, detail of sclerite warting.

plan and sectional views revealed no apertures or mesenterial structures in the caecae, only aggregates of cells which are probably zooxanthellae.

The surface of the large lobe contains club shaped sclerites (Figs 2, 3) with irregularly and complexly warted heads. They vary from 0.07-0.30 mm in length with most <0.28 mm long. There are also a few curved spindles, about 0.25 mm long, with simple processes, but they are quite rare.

The interior of the large lobe contains long, pointed, narrow spindles up to 2.2 mm long (Fig. 5A). Some of the smaller forms are branched. The complex warts are high and spiny (Fig. 5C).

The surface of the base contains clubs and a few irregular forms (Fig. 4). They are 0.09 - 0.22 mm long, with most <0.17 mm. The handles of the clubs are thicker than those in the lobe surface.

The interior of the base contains large, robust spindles, up to 2.5 mm long, many of which are terminally bifurcated (Fig. 5B). The complex warts are the same as those on the sclerites in the lobe interior, but they are far more densely placed.

Remarks. While comparing *Sinularia agilis* to other species of *Sinularia*, I was able to examine sclerite samples of the holotype of *S. ramosa* Tixier-Durivault, 1945. There is some similarity in the general shape of the sclerites

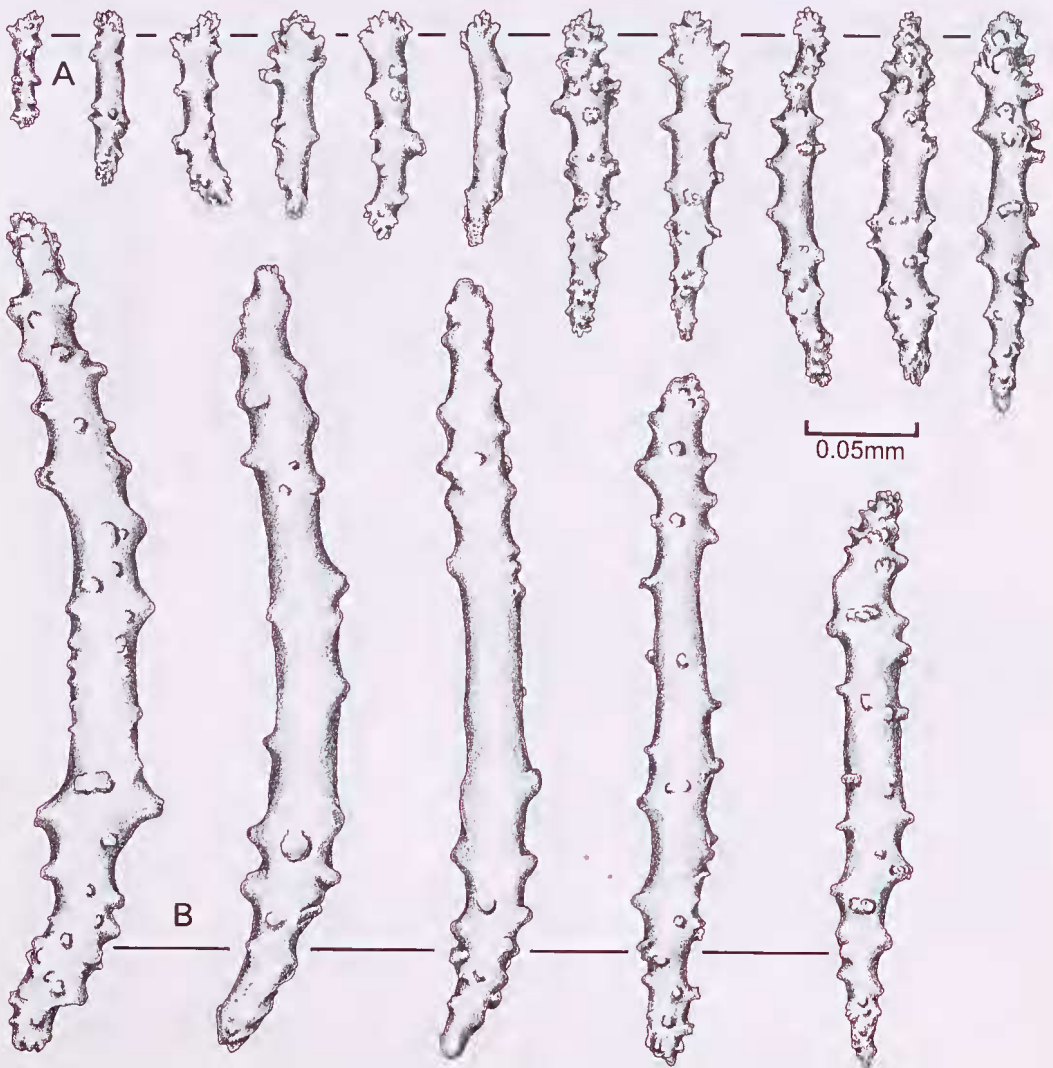


Fig. 6. *Sinularia ramosa*, holotype: A, polyp sclerites; B, sclerites from the surface of the lobes.

between this species and *S. agilis*, and it is not inconceivable that *S. agilis* could have a similar mature colony form. The style of the sclerite warring is different, but perhaps it is within the bounds of intraspecific variation. Unfortunately, the latter is a subject on which little is known for the majority of octocorals, and nothing is known with respect to *S. ramosa*. Tixier-Durivault did report other occurrences of the species, from New Caledonia (1970a:293) and Vietnam (1970b:205), but regrettably none of the 12 specimens were described. The author, characteristically, just repeated her earlier original diagnostic text word for word, including the sclerite dimensions.

The holotype of *S. ramosa* was redescribed by Verseveldt (1980:112-113), but two important facts were overlooked. First, the polyps are armed with at least four to five pairs of rod-like and club-like sclerites (Fig. 6A) arranged *en chevron*. They are 0.09-0.17 mm long. Second, the surface of the lobes contains numerous, narrow, often curved, pointed spindles (Fig. 6B) that are ornamented with simple prominences. It is also worth noting that the majority of surface clubs are only 0.09-0.12 mm long. This is not obvious from the text, but it is why this species is included in Verseveldt's key under group III. This size is considerably smaller than for *S. agilis* which is here considered a distinct species.

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